

# **David A. Chin, Ph.D., P.E., DEE**

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## **HIGHER EDUCATION**

### *Institutional:*

- Georgia Institute of Technology, Ph.D. (Civil Engineering), 1982
- California Institute of Technology, M.S. (Civil Engineering), 1978
- University of the West Indies, B.Sc. (Civil Engineering with First-Class Honors), 1977

### *Certification, Licensure:*

- State of Florida P.E. (Civil Engineering) No.36055
- Specialty Certification in Water Supply/Wastewater, No.97-20009, American Academy of Environmental Engineers

### *Training:*

- ABET Program Evaluator – Environmental/Civil/Architectural Engineering

## **EXPERIENCE**

### *Academic:*

- University of Miami, Professor of Civil and Environmental Engineering, 1994-Present.
- University of Miami, Chairman, Department of Civil, Architectural, and Environmental Engineering, 1992-2005
- University of Miami, Associate Professor of Civil Engineering, 1988-1994.
- University of Miami, Assistant Professor of Civil Engineering, 1984-1988.

### *Non-Academic:*

- United States Geological Survey, Miami, Florida, Project Chief, 1988-1989, 2001-2003.
- Hydrologic Associates, U.S.A., Miami, Florida, Consulting Engineer, 1988-1992.
- Harza Engineering Company, Chicago, Illinois, 1978-1979.

## **PUBLICATIONS**

### *Books and Monographs:*

- Chin, D.A. Water-Resources Engineering, Second Edition. Prentice Hall, Upper Saddle River, New Jersey, 2006.
- Chin, D.A. Water-Quality Engineering in Natural Systems, John Wiley & Sons, New York, 2006.
- Chin, D.A. Water-Resources Engineering, First Edition. Prentice Hall, Upper Saddle River, New Jersey, 750 pp., 2000.
- Chin, D.A. Solutions Manual to Water-Resources Engineering, Second Edition. Prentice Hall, Upper Saddle River, New Jersey, 2006.

- Chin, D.A. Solutions Manual to Water-Quality Engineering in Natural Systems, John Wiley & Sons, New York, 2006.
- Chin, D.A. Solutions Manual to Water-Resources Engineering, First Edition. Prentice Hall, Upper Saddle River, New Jersey, 322 pp., 2000.

*Major (Refereed) Reports:*

- Chin, D.A. and R.D. Patterson. Quantification of Hydrologic Processes and Assessment of Rainfall-Runoff Models in Miami-Dade County, Florida. U.S. Department of the Interior, United States Geological Survey, Scientific Investigations Report 2004-1346, Reston, Virginia, 2005.
- Chin, D.A. An Overview of Urban Stormwater-Management Practices in Miami-Dade County, Florida. U.S. Department of the Interior, United States Geological Survey, Open-File Report 2004-1346, Reston, Virginia, 2005.
- Chin, D.A. A Method to Estimate Leakage to the Biscayne Aquifer, Dade County, Florida. U.S. Department of the Interior, United States Geological Survey, Water-Resources Investigation No.90-4135, Tallahassee, Florida, 1990.

*Juried or Refereed Journal Articles:*

- Chin, D.A. (2007). "Hydrologic Processes in South Florida," Journal of Hydrologic Engineering, under review
- Chin, D.A., X. Fan, and Y. Li (2007). "Growth and Nutrient-Uptake of Tomato," Soil Science Society of America Journal, under review.
- Chin, D.A. (2007). "Hydraulics of Sewer Flows," Journal of Hydraulic Engineering, under review.
- Qian, Y., K.W. Migliaccio, Y. Wan, Y.C. Li, and D.A. Chin (2006). "Seasonality of Selected Physical and Chemical Characteristics of Surface Water in the Indian River Lagoon Area," Journal of Environmental Quality, in press.
- Bloetscher, F., J. Englehardt, D.A. Chin, J. Rose, G. Tchobanoglous, V. Amy, and S. Gokgoz (2005) Comparative Assessment of Municipal Wastewater Disposal Methods in Southeast Florida, Water Environment Research, vol. 77, no. 5, pp.480-490.
- Swain, E.D. and D.A. Chin (2003). "An Analytic Formulation of Two-Dimensional Groundwater Dispersion Induced by Surficial Recharge Variability," Water Resources Research, Vol.39, No.9, pp. SBH 17-1 to 17-8.
- Chin, D.A. and X. Qi (2000). "Ground water under the direct influence of surface water," Journal of Environmental Engineering, Vol.126, No.6, ASCE, pp.501-508.
- Chin, D.A. (1998). "Evapotranspiration of melaleuca forest in south Florida," Journal of Hydrologic Engineering, Vol.3, No.2, ASCE, pp.131-139.
- Chin, D.A., L. Ding, and H. Huang (1997). "Ocean-outfall mixing zone delineation using Doppler radar," Journal of Environmental Engineering, Vol.123, No.12, ASCE, pp.1217-1226.

- Chin, D.A. (1997). Discussion of "Probabilistic Analysis of Outfall Mixing Zones," by Huang, Fergen, Proni, and Tsai, *Journal of Environmental Engineering*, ASCE.
- Chin, D.A. (1997). "An assessment of first-order stochastic dispersion theories in porous media," *Journal of Hydrology*, 199 (1997), pp.53-73.
- Chin, D.A., S. Chinthamreddy, L.K. Shay, and H.C. Graber (1997). "The Structure of Ocean-Surface Currents Measured by Doppler Radar," *IEEE Journal of Oceanic Engineering*, Vol.22, No.1, IEEE, New York, pp.156-167.
- Chin, D.A., and M.K. Phang (1996). "Architectural Engineering Program at the University of Miami," *Journal of Architectural Engineering*, Vol.2, No.2, ASCE, New York, pp.78-79.
- Chin, D.A., and S. Zhao (1995). "Evaluation of Evaporation Pan Networks," *Journal of Irrigation and Drainage Engineering*, Vol.121, No.5, ASCE, New York, pp.338-346.
- Chin, D.A. (1995). "A Scale Model of Multivariate Rainfall Time Series," *Journal of Hydrology*, Elsevier Science Publishers, Amsterdam, Vol.168, pp.1-15.
- Chin, D.A., and P.V.K. Chittaluru (1994). "Risk Management in Wellhead Protection," *Journal of Water Resources Planning and Management*, Vol.120, No.3, Paper No.5337, ASCE, New York, pp.294-315.
- Chin, D.A. (1994). "Estimation of Dispersion Coefficients from Particle Tracks," *Journal of Environmental Engineering*, Vol.120, No.1, ASCE, New York, pp.256-263.
- Chin, D.A., and T. Wang (1992). "An Investigation of the Validity of First-Order Stochastic Dispersion Theories in Isotropic Porous Media," *Water Resources Research*, 28(6), 1531-1542.
- Chin, D.A. (1991). "Leakage of Clogged Channels that Partially Penetrate Surficial Aquifers," *Journal of Hydraulic Engineering*, Vol.117, No.4, Paper No. 25707, ASCE, New York, pp. 467-488.
- Swain, E.D. and D.A. Chin (1990). "A Model of Flow in Open Channel Networks," *Journal of Irrigation and Drainage Engineering*, Vol. 116, No. 4, Paper No. 24959, ASCE, New York, pp. 537-556.
- Chin, D.A. (1989). "A Diagnostic Model of Dispersion in Porous Media," *Journal of Hydraulic Engineering*, Vol. 115, No. 2, Paper No. 23161, ASCE, New York, pp. 210-227.
- Chin, D.A. (1989). Discussion of "Shoreline Impact from Ocean Waste Discharges," by R.C.Y. Koh, *Journal of Hydraulic Engineering*, Vol. 115, No. 8, ASCE, New York, pp. 1162-1163.
- Chin, D.A. (1988). "Spatial Correlation of Hydrologic Time Series," *Journal of Water Resources Planning and Management*, Vol. 114, No. 5, Paper No. 28782, ASCE, New York, pp. 578-593.
- Chin, D.A. (1988). "Model of Buoyant Jet-Surface Wave Interaction," *Journal of Waterway Port Coastal and Ocean Engineering*, Vol. 114, No. 3, Paper No. 22452, ASCE, New York, pp. 331-345.
- Chin, D.A. (1987). "Macrodispersion in Stratified Porous Media," *Journal of Hydraulic Engineering*, Vol.113, No. 10, Paper No. 21916, ASCE, New York, pp. 1343-1358.

- Chin, D.A. (1987). "Influence of Surface Waves on Outfall Dilution," Journal of Hydraulic Engineering, Vol. 113, No. 8, Paper No. 21710, ASCE, New York, pp. 1005-1017.
- Chin, D.A. (1986). "Estimation of Dispersion Coefficients in Porous Media," Journal of Hydraulic Engineering, Vol. 112, No. 7, Paper No. 20742, ASCE, New York, pp. 591-609.
- Chin, D.A. (1985). "Outfall Dilution: The Role of a Far Field Model," Journal of Environmental Engineering, Vol. 111, No. 4, Paper No. 19914, ASCE, New York, pp. 473-486.
- Chin, D.A., and P.J.W. Roberts (1985). "Time Series Modeling of Coastal Currents," Journal of Waterway Port Coastal and Ocean Engineering, Vol. 111, No.6, Paper No. 20175, ASCE, New York, pp. 954-972.
- Chin, D.A., and P.J.W. Roberts (1985). "Model of Dispersion in Coastal Waters," Journal of Hydraulic Engineering, Vol. 111, No. 1, Paper No. 19411, ASCE, New York, pp. 12-28.

## **FUNDED RESEARCH**

### *External:*

- Principal Investigator, "Modeling Surface and Subsurface Water Flow and Soil Water Balance in South Florida", United States Department of Agriculture, \$13,193, 2004-2005.
- Principal Investigator/Project Chief, "The Relationship Between Rainfall and Runoff in the Developed Areas of South Florida", United States Geological Survey, \$537,524, 2001-2003 (PI funded via direct faculty appointment with USGS).
- Principal Investigator, "A Study of the Application of Ocean Surface Current Radar Systems to the Identification of Outfall Mixing Zones," National Science Foundation, \$103,546, 1995-1998.
- Co-Principal Investigator (with John Wang, Rosenstiel School of Marine and Atmospheric Science), "Development of a Fate and Transport Model for Oil Spills in Tampa Bay," Florida Power and Light Company, \$350,000, 1994-1996.
- Principal Investigator, "Development of a Research Plan for the Study of Melaleuca ET Rates and Areal ET from the Lakebelt Area," South Florida Water Management District, \$25,000, 1995-1996.
- Principal Investigator, "A Fundamental Investigation of the Validity of Formation-Scale Stochastic Theories of Dispersion in Porous Media," U.S. Environmental Protection Agency, \$103,738, 1993-1995.
- Principal Investigator, "Development of a Diagnostic Approach to Real-Time Forecasting of Oil-Spill Movement," United States Coast Guard/International Oceanographic Foundation, \$21,000, 1993-1995.
- Co-Principal Investigator (with T. Van Lent, U.S. National Park Service), "Evaluation of the Meteorological Data Collection Network within the South Florida Water Management District," South Florida Water Management District, \$108,700, 1993-1994.
- Principal Investigator, "The Development of a Risk-Management Strategy for Wellhead Protection," U.S. Environmental Protection Agency, \$139,495, 1991-1993.

- Principal Investigator, “Analysis and Prediction of South Florida Rainfall,” United States Geological Survey and South Florida Water Management District through the Florida Water Resources Center, \$55,483, 1991-1993.
- Principal Investigator, “Field Validation of a Dispersion Model Based on Geological Parameters,” United States Geological Survey through the Florida Water Resources Center, \$21,875, 1987-1988.
- Principal Investigator, “A Study of the Influence of Surface Waves on Outfall Dilution,” Engineering Foundation, \$17,000, 1985-1986.

*Internal:*

- Co-Principal Investigator, “Multiplanning Information Systems,” University of Miami, College of Engineering, \$12,000, 1989. (with A. Kumbhojkar, M. Phang, and K. Zografos)
- Principal Investigator, “A Study of the Influence of Surface Waves on Outfall Dilution,” University of Miami, General Research Support Award, \$4,000, 1984-1985.

## **PROFESSIONAL ORGANIZATIONS**

- Fellow, American Society of Civil Engineers
- Diplomate, American Academy of Environmental Engineers
- Member, Water Environment Federation
- Member, American Water Works Association
- Member, American Geophysical Union
- Member, American Society for Engineering Education

## **HONORS AND AWARDS**

- Alexander Orr Jr. Excellence in Teaching Award, 2006 (College of Engineering, University of Miami)
- Chi Epsilon Outstanding Teacher Award, 2003
- Collingwood Prize, American Society of Civil Engineers, 1989, for paper: “Influence of Surface Waves on Outfall Dilution.”
- Eliahu I. Jury Excellence in Research Award, 1990, College of Engineering, University of Miami.  
Award for best Technical Paper Published by Faculty in the College of Engineering in 1986, University of Miami.
- Award for best Technical Paper Published by Faculty in the College of Engineering in 1985, University of Miami.

## **EDITORIAL RESPONSIBILITIES**

- Reviewer, Critical Reviews in Environmental Science and Technology, 2006
- Reviewer, Journal of Irrigation and Drainage Engineering, 1993-1994, 1998-2003, 2006
- Reviewer, Water Resources Research, 1995, 1996, 2005
- Reviewer, Journal of the American Water Resources Association, 2004
- Reviewer, Journal of Hydraulic Engineering, 1998, 2003.
- Reviewer, Journal of Environmental Engineering, 1997.
- Reviewer, Journal of Water Resources Planning and Management, 1989, 1995.
- Reviewer, Coastal Engineering, 1997.
- Reviewer, The West Indian Journal of Engineering, 2000, 2002-2003

- Reviewer, Soil Science Society of America Journal, 1990.
- Reviewer, New Jersey Sea Grant Program, 1999
- Reviewer, Hydrology Program, National Science Foundation, 1994.
- Reviewer, Groundwater Contamination and Control, by U. Zoller, Marcel Dekker Publishers, 1992.

## TEACHING SPECIALIZATION

*Courses taught at the University of Miami:*

- Fluid Mechanics
- Introduction to Environmental Engineering
- Water-Resources Engineering
- Design and Analysis of Water Quality Control Systems
- Water-Quality Control in Natural Systems
- Surface-Water Hydrology
- Ground-Water Hydrology
- Environmental Fluid Mechanics

## THESIS AND DISSERTATION ADVISING

*Principal advisor of the following theses and dissertations:*

*Ph.D.:*

- Rojas, R., “Probabilistic Drought Prediction”, 2002 – Present.
- Sakura-Lemessy, D., “Effects of Urban Development on Water Quality,” 2003 – Present.
- Swain, E., “Effects of Variability in Surficial Recharge on Dispersion in Ground Water,” 1989-1997.

*M.S.:*

- Xu, H., “Urban Hydrology of South Florida,” 2000-2002.
- Qi, X., “The Development of a Risk Assessment Methodology to Identify Ground Water Under the Direct Influence of Surface Water,” 1997-1999.
- Ding, L., “Application of Ocean Surface Current Radar to the Delineation of Outfall Mixing Zones,” 1995-1997.
- Zhao, S., “An Assessment of the Evaporation and Rain Gage Networks in the South Florida Water Management District,” 1993-1995.
- Chinthamreddy, S., “Validation of a Diagnostic Model of Ocean Currents,” 1993-1995.
- Chittaluru, P.V.K., “A Risk Assessment Model for Wellhead Protection,” 1991-1993.
- Swain, E., “A Numerical Model of Unsteady Flow in Open Channel Networks,” 1986-1988.
- Mitchell, F., “A Model of Buoyant Jet-Surface Wave Interaction,” 1986-1987.

## SERVICE

*University:*

- Chairman, Department of Civil, Architectural, and Environmental Engineering, 1992-2005
- Faculty Senator, University of Miami, 2001-2005
- Board of Representatives, Hydrogeology Consortium, Center for Environmental Studies, Florida Atlantic University (1998-2000)

- Member of the Engineering Science Advisory Board, College of Engineering (1992-Present)
- Member of the University of Miami Fellowship Committee (1989-1993)
- United Way Coordinator, College of Engineering (1993)
- Member of the College Council, College of Engineering (1990-1992)

*Professional:*

- Member, Academic Council, Architectural Engineering Institute, ASCE (1998-2005)
- Chairman of the Scholarship Committee, Florida Engineering Society, Miami Chapter (1987-1989)

*Community:*

- Member, Miami-Dade Environmental Quality Control Board (2003-Present)
- Member, Technical Review Committee, South Dade Watershed Study (2003-2006)